

State of Louisiana
Department of Transportation and Development(DOTD)
Materials and Testing Section Qualification Procedure
for
Qualified Products List 69

NOISE REDUCTION SYSTEMS

MATERIAL SPECIFICATION REFERENCE:

DOTD Special Provisions, Noise Reduction Systems 1/95 (copy attached).
DOTD Special Provisions, Noise Reduction Systems Metric 1/95 (copy attached).

This reference covers reflective and absorptive barriers constructed from concrete, fiberglass, plastic and steel components as well as pertinent noise abatement criteria. A complete listing of ASTM tests pertinent to this qualification procedure is attached for review.

PRELIMINARY REQUIREMENTS

Qualified Product Evaluation Form

Submit a standard "Qualified Product Evaluation Form" to the DOTD Materials and Testing Section Coordinator listed below, along with a letter requesting evaluation for the Qualified Products List. (copy of form attached)

Product Data Information

Manufacturers shall submit to the Materials Section product literature including pictures and engineering drawings of their noise reduction system. The literature should contain general maintenance requirements, wind load calculation data, and under normal environmental conditions the anticipated design-life of the barrier system.

Engineering drawings of barrier design will be required from all system manufacturers; the drawings must include mounting details and expansion-joint provision if required. Metallic barrier systems will require provisions for electrical grounding. Four (4) sets of drawings shall be sent to the Materials Section for review and distribution; a Department structural-design engineer will review all submitted materials for design approval.

Product data information shall also include the dates of installation, locations of noise reduction systems and a contact persons for each system meeting the minimum three year field performance criteria.

Product Samples (to be provided at no cost to the Department)

Representative samples of the system shall be furnished for testing within the Materials Section's laboratories; two panel samples, each .7 meters by .7 meters (two feet by two feet) minimum, shall be provided for testing purposes. Additionally, major components of the support system such as I-beams, H-beams, etc. and ancillary mounting hardware are to be provided along with the acoustical panels. Submittal of the individual components of the panels may be required for testing.

TESTING REQUIREMENTS

Test Reports Required From manufacturer

Certified laboratory test results for Sound Transmission Class "STC" (ASTM E 413 and ASTM E90) must be submitted to the Materials Section for reflective and absorptive - type barrier systems. In addition to STC, absorptive-type barrier systems require acoustical testing for Noise Reduction Coefficient in accordance with ASTM C 423. The system manufacturer must also provide certified test results describing the surface burning characteristics of all potentially flammable components (flame spread indices - ASTM E84).

Materials Laboratory Testing

Galvanized hardware shall be hot-dipped and tested in accordance with ASTM A153. Coated steel systems shall be fully coated, including any perforations, with an anti-corrosive protective system. Coated steel systems shall be exposed to 1,500 hours of weathering in accordance with ASTM B117 and ASTM G53. After exposure the systems shall show no blistering, cracking, flaking, peeling, undercutting and only slight chalking, fading or discoloration.

Fiberglass and plastic systems shall undergo ultraviolet-light testing (ASTM G53) for a period of 1,500 hours. Any delamination, excessive fading or chalking, delamination or embrittlement will result in disqualification.

Precast concrete panels must conform to Section 901 of the 1992 Standard Specifications and shall be subject to not less than 50 cycles of freeze/thaw exposure.

Other miscellaneous systems not mentioned above will be evaluated for durability on a case by case basis using appropriate ASTM test procedures for the submitted materials.

Total Evaluation Time

Six (6) months minimum

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PROJECT SAMPLE REQUIREMENTS

The noise reduction system delivered to the job site shall be representative of the approved system from the Qualified Products List (QPL). The system shall be accompanied by a certificate of conformance that states that the system is identical to that tested and approved for the QPL.

GENERAL

Disqualification

Any system may be removed from the QPL as a result of alteration of the system's design or composition which may affect its application or performance. Therefore, the Department must be notified in writing when an approved system has undergone redesign or reformulation. Significant alternation of a previously approved system will necessitate a complete reevaluation as described herein.

Re-qualification

Should a system fail to meet minimally acceptable criteria, and thus be excluded from the Qualified Products List, the manufacturer shall submit to the Department a formal written request for re-qualification of a modified system. The request for reevaluation must contain reasonable evidence that deficiencies causing the disqualification have been rectified.

DOTD MATERIALS AND TESTING SECTION COORDINATOR

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Approved 2-14-02

N. "Doug" Hood, P.E.
MATERIALS ENGINEER ADMINISTRATOR

